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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/187,662 01/26/94 ALFIERI

R D6590

EXAMINER

RISHEY, H

B3M1/0103

ART UNIT	PAPER NUMBER
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2316

DATE MAILED: 01/03/96

ROBERT L. DULANEY
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DATA GENERAL CORPORATION
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This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 9/11/95 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-7 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-7 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

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Part III DETAILED ACTION

1. Applicant's arguments filed 9/11/95 has been fully considered but they are not deemed to be persuasive.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate written description of the claimed invention.

The central idea of the invention is to promote/demote system/kernel calls. Since this feature is new, the specification should provide an adequate written description of how this is accomplished.

3. Claims 1 - 7 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

i. The applicant's arguments do not address the above mentioned central idea of the invention that is not adequately disclosed. Utilize the specification to describe the promote/demote system/kernel calls.

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Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 - 4 are rejected under 35 U.S.C. § 102(b) as being anticipated by Deitel.

i. Per claim 1:

Deitel teaches a data processing system capable of executing processing threads (page 575, section 18.6.5) and capable of supporting simultaneous operation of a plurality of kernel function calls and a plurality of system calls (page 61, section 3.9). Deitel teaches initiating a kernel function call (page 61, section 3.9 cites interrupts or calls to the nucleus or kernel). Deitel teaches monitoring for a complication during execution of the kernel function call as utilizing the operating system code to indicate an interruption or complication (page 62 and page 575, 2nd paragraph). Deitel teaches promoting from the kernel function call to the system function call as the nuclei (or kernel) are designed to do the "bare minimum amount of processing that is possible on each interrupt, and then to pass the remaining processing of each interrupt to an appropriate system process that can operate while the nucleus is enabled for further

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interrupts" (page 61, and 62 cite complications or interrupts). Deitel teaches continuing execution in the system call as "an appropriate system process" operates on the amount of processing. Deitel teaches if a complication is not detected, completing execution of the kernel function call (page 575, 2nd paragraph).

ii. Per claim 2:

Deitel teaches monitoring for a suspended state in the system call as the nucleus functions to suspend and resume processing (page 62). Deitel teaches demoting from the system call to the kernel call and continuing execution in the kernel function call (This is operating the nucleus or kernel after an interrupt). Deitel teaches if a suspended state is not detected, completing execution of the system call (page 61, last paragraph).

iii. Per claim 3:

Deitel teaches assigning a stack to the system call and releasing the stack as creating and destroying the stack of a process created by a system call (paragraphs 4 and 5, page 575).

iv. Per claim 4:

The rejection above in section i applies since the interrupted parameters must be stored in the computer in order for the system call to be initiated.

v. The applicant's arguments for claim 1 do not specify the limitations not taught by the references. They are merely a

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summary of the references, and do not point out the deficiencies in the reference.

vi. The applicant argues for claim 2 that Deitel does not teach suspending process execution as a system call and later resuming that process execution as a kernel function call. The applicant has not claimed the process execution features.

vii. The applicant argues for claim 3 that Deitel has no notion of the idea of promotion/demotion between a kernel function call and a system call and certainly no notion of the specific steps of claim 3. Deitel's notion of demotion is interrupting the kernel processing to promote a system process for processing (page 61, last paragraph). Furthermore, since the kernel manages real memory and kernel functions include system calls, a kernel process assigns a stack region to the kernel functions or system calls (page 575, paragraphs 2 and 4).

viii. The applicant argues that he does not understand the basis for the rejection of claim 4, and utilizes the specification to describe parameters. The breadth of parameters here not only reads on those in the specification, but on the passing of parameters to a system function via a system call which is inherent to the Deitel reference.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

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A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

7. Claims 5 - 7 are rejected under 35 U.S.C. § 103 as being unpatentable over Deitel.

i. Per claims 5 and 6:

Deitel teaches monitoring for a complication as utilizing the operating system code to indicate an interruption (or complication), page 62. Deitel teaches promoting from the kernel function call to the system function call as the nuclei (or kernel) are designed to do the "bare minimum amount of processing that is possible on each interrupt, and then to pass the remaining processing of each interrupt to an appropriate system process that can operate while the nucleus is enabled for further interrupts" (page 61, 62). Deitel teaches handling the complication in the system call as "an appropriate system process" operates on the amount of processing. However, Deitel does not teach passing an identifier indicating the amount of

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kernel function call execution that had been completed at the time the complication was detected. One of ordinary skill in the art realizes that in order to complete the remaining processing, it must be identified. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the resumption of a process occur at the same point prior to the interruption because this allows efficient execution of the process without duplicating or omitting any process events (or phases).

ii. Per claim 7:

Deitel teaches monitoring for a complication as utilizing the operating system code to indicate an interrupt (complication), page 62. Deitel teaches promoting from the kernel function call to the system function call as the nuclei (or kernel) are designed to do the "bare minimum amount of processing that is possible on each interrupt, and then to pass the remaining processing of each interrupt to an appropriate system process that can operate while the nucleus is enabled for further interrupts" (page 61, 62). Deitel teaches handling the complication in the system call as "an appropriate system process" operates on the amount of processing. However, Deitel does not teach releasing a spin lock. One of ordinary skill in the art realizes that kernel function for allocation and dislocation of storage (page 62) utilizes locks to prevent

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competing process from interfering with each other's allocation of storage. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to lock a process to an area of memory because this forbids other processes from erroneously accessing this memory.

iii. The applicant argues for claims 5 and 6 that Deitel cannot pass control during processing, and therefore, has no notion of passing or checking an identifier. Deitel teaches the bare minimum processing and remaining processing (page 61, last paragraph). One skilled in the art realizes to do the remaining processing, one has to identify the remaining processing.

iv. The applicant argues for claim 5 and 6 that Deitel's interrupts are not analogous to his claimed method. An interrupt allows for the demotion of the current process so that another process can be promoted for execution. The nuclei or kernel processes these call in conjunction with appropriate system processes.

v. The applicant argues for claim 7 that releasing a spin lock is not obvious. The kernel manages real memory (page 575, 2nd paragraph). Therefore, it is obvious to one of ordinary skill to release a lock to memory that is not being utilized.

Conclusion

8. Page 587 of the Deitel reference is cited due to the changes in the claim language.

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9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael T. Richey whose telephone number is (703) 305-9669.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

mjr

Michael T. Richey
12/20/95


ALVIN E. OBERLEY
SUPERVISORY PATENT EXAMINER
ART UNIT